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The benefits of being a near-peer teacher

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Abstract

Background: Near-peer teaching is used in anatomy education because of its benefits to the learner, teacher and faculty. Despite the range of reports focusing on the learner, the advantages for the teacher, which are thought to include communication skills, subject knowledge and employability, are only beginning to be explored.

Method: A questionnaire was distributed to the teachers involved in anatomy near-peer teaching at the University of Southampton and Brighton and Sussex Medical School. This questionnaire was designed using 0-10 rating scales to assess teacher perspectives on their level of knowledge, teaching skills and enjoyment of teaching. Free text responses determined the teachers' motivation and perceived benefits from the teaching.

Results: Twenty-eight questionnaires were gathered (54.9% response rate) including 20 from Southampton and 8 from BSMS. Long term knowledge retention and better understanding of the material were rated 8.1 and 7.9 out of 10 respectively. Eight responses were from currently practising doctors, who rated how much they now use their teaching skills as doctors as 8.9 out of 10. Of the 8 doctors, 7 gained points for their foundation programme applications as a direct result of near-peer teaching. The most common motivator for engaging in teaching was to improve subject matter knowledge and the most common benefit was improved communication skills.

Discussion: There are numerous advantages to being a near-peer teacher in medical school, which include knowledge improvement, transferrable professional skills and employability. These initial

results support the hypothesised benefits to the teachers and provide a foundation for further longitudinal studies.

Introduction

Near-peer teaching (NPT) is becoming an increasingly popular method of supplementing education within medical curricula and is described as an approach where the teacher is at least one year more senior to the learner. It has been implemented for a wide range of purposes including: anatomy,^{1, 2} pathology³ and physiology.⁴ There has been a rapidly increasing interest in the utilisation of NPT as a way of supplementing faculty resources, thus improving the student learning experience, particularly within anatomy.

The NPT literature shows that there are benefits to the learner, the teacher and the faculty.⁵ The benefits that NPT has for learners results from the unique teacher–learner relationship whereby their similar stage in training means that the teacher and learner share cognitive and social congruence.⁶ The benefits of this to the learner predominantly revolve around more open discourse and admissions of ignorance. Despite the plethora of reports focusing on the benefits to the student learner, there is little evidence describing how the teachers benefit from the experience. The teachers in the Evans and Cuffe study⁷ report that they gained teaching and communication skills as well as contributions to their overall career development. Erie et al.⁸ reports that 88% of their student teachers also benefited from teaching with scholarly output. Aside from these isolated reports there has been no longitudinal follow-up on the long-term advantages for their career progression.

Both the University of Southampton and the Brighton and Sussex Medical School (BSMS) have established NPT programmes which have been running in neuroanatomy since 2010 and anatomy viva preparation since 2013 respectively. This study evaluates teachers from two long standing NPT programmes and is the first to report UK based results on how useful it is to be a near-peer teacher in the context of future employability.

Method

A questionnaire was developed by the authors using four themes (deeper learning, teaching skills, career development and enjoyment) identified in the seminal paper by Evans and Cuffe.⁷ A bespoke questionnaire was required for this programme evaluation due to the absence of a validated survey in the literature which incorporated an assessment of career and academic outcomes. The questionnaire incorporated Likert style questions using 0-10 scores rating the teachers' agreement. The teachers were also asked for free text responses to questions on their motivation for teaching and the greatest benefit they derived from the teaching process. Lastly the questionnaire asked student teachers for the number of conference presentations and publications they had authored on the subject of near-peer teaching as a result of being involvement in the NPT programmes.

This questionnaire was distributed by email to 43 individuals who have taught in the Southampton NPT programme in addition to 8 students from BSMS. These institutions were selected because of their sustainable teaching programmes which allow for greater longitudinal follow-up of the teachers. Student teachers who had delivered a teaching session in these programmes were eligible and identified using the authors' personal records of the teaching programmes.

As the questionnaire comprised of both quantitative and qualitative components a dual analysis was performed. Quantitative components were collated and analysed with descriptive statistics, including mean averages for the ratings, using GraphPad Prism Version 6.

For the qualitative component the responses were evaluated for common themes and the number of responses for each theme were summed together by the lead author (SH). Another researcher (CS) then independently viewed the themes to improve reliability and a discussion occurred to confirm the final themes."

Results

Twenty-eight questionnaires (54.9% response rate) were returned from near peer teachers (University of Southampton = 20, BSMS = 8). Of these 28 responses, eight were received from teachers who have graduated since teaching (6 in the UK Foundation Programme and 2 in higher training in neurology and neurosurgery).

The questionnaire items relating to the benefits on teacher learning (long term knowledge retention, understanding of the material and motivation to continue studying the material) were rated 8.1, 7.9 and 6.8 out of 10 respectively. The two items measuring teaching skills (how rewarding they find teaching and how much they use teaching skills now as a doctor) were 9.2 and 8.9 out of 10. Regarding how enjoyable the teachers found the teaching experience, the average rating was 8.9 out of 10. The questionnaire items and feedback scores are shown in table 1.

As a direct result of being involved in the NPT programme, 7 of the 8 practising doctors gained points on their foundation programme application system (FPAS) score which is used to allocate final year medical students' preferences for post-graduate year 1 rotations. Both of the doctors in specialist training, and a further 3 who are currently undergoing applications for specialist training (neurosurgery, ophthalmology and anaesthetics), used their NPT experiences as part of their applications for higher training.

The 28 teachers responded with 44 free text comments regarding their motivation for getting involved with the NPT programme (Table 2). The most common reason cited was the teacher wanting to improve their own knowledge of the subject. The free text question asking for how the teachers felt they most benefited from the experience returned 35 items from the 28 teachers

(Table 3). The most commonly reported benefit was an improvement in confidence for public speaking and better communication skills.

The mean number of conference abstracts per person was 4.3 (range 0-31) and the mean number of published articles was 0.62 (range 0-6). The total number of conference abstracts and published articles disseminated by the University of Southampton NPT programme between 2010 and 2016 was 31 and 6 respectively.

Discussion

Near-peer teaching is a well established practice in the academic and medical literature. The University of Southampton and BSMS have been running NPT programmes in anatomy for many years. These sustainable programmes have utilised a large number of student teachers, overcoming one of the main constraints to investigating the student teacher, which is the relatively low number of teachers involved and the short-lived nature of most programmes. The duration of these programmes creates the opportunity to explore how NPT affects the teachers both in terms of their attitudes as well as the long term tangible benefits when the students become doctors.

The respondents of this study believe that the NPT experience has improved their academic ability, given them a better understanding of the material, and improved long term knowledge retention. The notion that teaching improves one's own learning is epitomised by the quote by Joubert who said that "to teach is to learn twice".⁹ This finding mirrors other teachers' comments published in the anatomy education literature.^{2,7}

This study also suggests that not only does the act of teaching improve the teachers' knowledge, it also motivates them to continue studying the subject which is something that also has been seen

previously in the NPT literature.¹⁰ A student or doctor's intrinsic interest in a subject is far more valuable for learning than extrinsic motivators such as examinations, because of its tendency to remain even when the external factors have been removed. It may also form a positive feedback cycle, whereby self-study only increases the student's interest to study further.

In addition to the perceived improvement in subject knowledge and interest in the subject, there are also perceived improvements in transferrable professional skills. The GMC's *Outcomes for Graduates* describes the importance of communication methods which is one of the benefits reported by these teachers (Table 3) and echoes an American evaluation into core teaching competencies in NPT.⁸ They also reported that their near-peer teachers had engaged in a range of educational scholarships.

Outcomes for Graduates also highlights the importance of understanding scientific methods. This cohort suggests a career advantage of educational research attained through participating in a NPT programme. Our study indicates that the findings of Erie et al.⁸ are reproducible among medical students from the UK as well as advancing their work by showing that scholarly activity by NPT has a positive impact upon career progression. Teaching experience is hard to quantify beyond the simple fact that one had been involved in it and the employment benefits gained by these teachers appear to be through scholarly activity in NPT. Engaging in the dissemination of academic work is only possible for the more motivated students in an established, innovative NPT programme.

There are several limitations to this study, most notably that it draws from two case studies which may not be reflective of experiences at other institutions. A second researcher who reviewed the themes sought to minimise researcher bias but as both researchers are involved in NPT this may not be truly possible. The academic output of student teachers as measured by conference presentations and publications only relates to these NPT and there is no data on how these numbers compare to students not involved in NPT programmes. Furthermore, the results are based on

anatomy programmes and may not reflect the benefits of being a near-peer teacher in other subjects.

In conclusion, this study is the first to report on the potential for employment advantages through NPT and as more of the teachers graduate this picture will become clearer. Further longitudinal studies are required to explore the long term postgraduate benefits of being a NPT and which student characteristics lead to the greatest benefits.

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Table 1: mean average responses for questionnaire items (0=least agree, 10=most agree)

* responses from the 8 responders who are now practising doctors.

Questionnaire Item	Average response
Being a near-peer teacher improved my long term retention of the subject matter	8.1
Being a near-peer teacher helped me to better understand the subject material	7.9
Being a near-peer teacher motivated me to continue studying the material even after the teaching had finished	6.8
I found my near-peer teaching experience rewarding and it has motivated me to do more teaching in the future	9.2
I developed teaching skills which I now use as a doctor*	8.9
How enjoyable did you find the experience of teaching other medical students?	8.9

Table 2: free text responses to the question “What motivated you to initially get involved in teaching other medical students?”

Motivation themes	Examples	Number
Revision of the subject	“You only truly know a subjects if you are able to teach it to others”	13
Desire to learn teaching skills	“[I] wanted to build confidence in teaching”	10
Wanting to help other students	“Hopefully for students to get something out of it”	9

Enjoyment of previous teaching experiences	"[I] enjoyed previous teaching"	6
Wanting to build their CV	"Teaching experience [is] important for job applications"	3
Enjoyment of neuroanatomy	"Passion for neuroanatomy"	3

Table 3: most common free text responses to the question "What do you think has been the greatest benefit you gained from being a near-peer teacher?"

Benefit themes	Examples	Number
Improved subject knowledge	"A proper understanding of the subject content"	14
Confidence for public speaking and communication skills	"Confidence to speak to a group of people in a teaching environment"	10
Learnt teaching skills for future use	"An interest in teaching that I intend to carry on as FY1"	7
Academic opportunities/CV building	"Multiple academic / research opportunities, conference attendance and publications etc."	2